

ABSTRACT

A gun propellant formulation comprising: a nitrocellulose component comprising from about sixty-five percent (65.0%) to about ninety-five (95.0%) of the gun propellant by weight, having a nitrogen proportion of substantially twelve and six-tenths percent (12.6%) nitrogen; an energetic plasticizer component comprising from about 5.0 percent (5.0%) to about 35 percent (35.0%) of the gun propellant by weight, and comprising N-Butyl-2Nitrateethyl Nitramine (BuNena); a burning rate moderator and stabilizer component comprising from about one-half of one percent (0.5%) to about five percent (5.0%) of the gun propellant by weight, and comprising Sym-Diethyl Diphenyl Urea, N,N'-Diethyl Carbanilide (Ethyl Centralite, Centralite I); and a stabilizer component comprising about one-half of one percent (0.5%) to about five percent (5.0) of the gun propellant by weight, and comprising Acetyl triethyl citrate (ATEC). Additional components comprising less than 5% of the gun propellant may optionally include Graphite, carbon black, and candelilla wax.